McKinleyville Community Services District
1656 Sutter Road
McKinleyville, CA 95519
2005

URBAN WATER MANAGEMENT PLAN

December 21, 2005

McKinleyville CSD
PO. Box 2037
McKinleyville, CA 95519
(707)839-3251

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Introduction

This Urban Water Management Plan (UWMP) for the McKinleyville Community Services District (MCSD or District) has been prepared in accordance with the California Urban Water Management Planning Act of 1983 (AB 797) as amended. This update was prepared and adopted during the summer and fall of 2005. It contains all information required by the California Water Code, Division 6, Part 2.6. This is the fifth such plan prepared by the District; the last pan was submitted in December 2000.

The District is a water distributor. All water is purchased from a regional supplier. The District pumps potable water from the supplier, maintains stand-by chlorination and delivers water to over 5300 customers.

The data used for preparing this report comes primarily from the District's operational records. Figures relating to watershed runoff were obtained from the United States Geological Survey. Current and projected population figures for Humboldt County are from the U.S. Bureau of the Census; and the California Department of Finance, Demographic Research Unit, respectively.

Section 1 - Agency Coordination

Contact was made with each of the other six municipal customers who also purchase water from our regional supplier. These municipal agencies qualify as an Urban Water Supplier as defined by the Urban Water Management Planning Act. Humboldt Bay Municipal Water District (HBMWD), the regional supplier assisted all seven of the municipal agencies in the preparation of our Urban Water Management Plans. The seven agencies, and HBMWD, have been meeting for the past six months to share information and complete these plans.

Table 1 – Coordination with Appropriate Agencies

Agency	Participated In Plan Development	Commented On the Draft Plan	Attended Public Meetings	Contacted For Assistance	Received Copy of Draft Plan	Notice of Intention To Adopt
City of Arcata	X	X		X	X	X
City of Eureka	X	X		X	X	X
Humboldt CSD	X	X		X	X	X
McKinleyville CSD	X	X		X	X	X
County of Humboldt				X	X	
Dept Water Resources				X	X	

Section 2. Step 2: Service Area Information with 25-year projections

McKinleyville is located on the Northern California Coast in Humboldt County. McKinleyville bound on the north by Little River and on the south by the Mad River. The District was formed in 1970 and provides a number of municipal services for the local residents. This is an area of considerable rainfall averaging about 60 inches per year with over 100 inches annually upon occasion. Historically, water supply in the area has not

been a problem and it is not foreseen to be a problem in the future. 1976/1977 was a period of lower rainfall that created some concerns and resulted in Board action to institute Ordinances regarding drought periods.

McKinleyville is a bedroom community of the Arcata and Eureka area. Since the MCSD is an unincorporated area of Humboldt County our population is derived from calculation of the number of persons per residence times the number of services in the District. Using the 2000 census data of 2.61 persons per household we calculated the population to be 13,837. The population is stable and growing slowly. Service growth has been steady at about 2.8% for the last 25 years but the population growth is closer to about 1.8%. Over the last few decades, the number of persons per household with reducing due to smaller size families, single parent families and more senior retirement. Annual water increases per household are also being reduced from earlier decades. We expect this trend to continue.

Population – Current and Projected (Table 2.2.1) @ 1.8% growth

	2005	2010	2015	2020	2025	2030
McKinleyville Service Area	13,837	15,128	16,247	17,763	19,240	21,232

The coastal zone, general plan restrictions, resource constraints and stagnant economic climate will keep expansion at a low rate. Land use policies and Humboldt County General Plan zoning encourage small businesses, tourism and light manufacturing. Logging and the fishing industries are diminishing in their contribution to the local economies. We are an economically disadvantaged area with a median family income of just over $38,000 per year as listed in the economic data produced by Humboldt County on the area demographics.

General Plan zoning laws encourage increasing density on existing parcels. This is noticed in apartment construction and second units (mother-in-law) units. Subdivision construction is modest with smaller lot sizes and increased density in the areas developed with infrastructure and existing roads.

Climate:

There are not CIMIS stations on the north coast, the nearest station being about 70 miles east in Forest Glenn. The information on the Forest Glenn Station is listed after the local climate discussion.

The District does maintain a weather station at our District Wastewater Treatment Facility. This area temperature is generally about 55 degrees with considerable fog and rain. Temperatures are typically in the low 50's and high 40's in the wintertime and high 50's to mid 60's all summer long due to heavy fog and strong north winds. The fall temperatures are in the mid 60's when the fog dissipates. Rainfall has averaged 63 inches for the last decade, with occasional rainfall up to100 inches.

McKinleyville Climate Table 3

	Jan	Feb	Mar	Apr	May	June
Standard Monthly Average ETo						
Average Rainfall (inches)	10.38	15.50	4.15	3.81	1.36	.06
Average Temperature (Fahrenheit)	48	49	49	51	54	57

McKinleyville Climate Table 3 continued

	Jul	Aug	Sept	Oct	Nov	Dec	Annual
Standard Monthly Average ETo							
Average Rainfall (inches)	.06	.90	1.26	8.55	3.43	13.98	63.42
Average Temperature (Fahrenheit)	58	58	56	59	51	48	53.17

Climate Continued: (this information taken from HBMWD UWPM)
Humboldt County's watersheds receive high annual rainfall. Rainfall at Eureka averages just under 40 inches per water year (October to September). At Ruth, in Trinity County, where the District operates R.W. Matthews Dam and Ruth Reservoir (Ruth Lake), average rainfall is just under 70 inches per water year. Some mountainous areas within the region often receive more than 100 inches of rain per year.

Table 3 shows average monthly evapotranspiration, rainfall and temperatures for the Forest Glen weather data gathering station. This station is located near the Ruth area. The data comes from the California Irrigation Management Information System (CIMIS) operated by the Department of Water Resources.

Table 3 – Climate

Month	Std Mo Avg ETo (Evapotranspiration) (Inches)	Average Rainfall (Inches)	Average Temperatures Min - Max (Fahrenheit)
Jan	1.9	12.5	26.4 – 45.1
Feb	2.2	9.8	29.5 – 51.5
Mar	3.7	9.2	30.7 – 56.0
Apr	4.8	4.5	32.9 – 63.5
May	5.3	1.6	37.8 – 72.9
Jun	5.7	0.6	43.3 – 82.5
Jul	5.6	0.2	46.4 – 91.4
Aug	5.3	0.4	45.3 – 90.6
Sep	4.2	1.1	41.0 – 84.4
Oct	3.4	3.4	35.5 – 70.2
Nov	2.4	9.2	31.7 – 53.3
Dec	1.9	11.4	28.3 – 45.2

Water Sources:

The McKinleyville Community Services District has one source of water. Our sole source of water is purchased from Humboldt Bay Municipal Water District (HBMWD). The water delivered from HBMWD to the MCSD is through a single transmission main under the Mad River. The District then boosts the water from our North Bank Pump Station and sends water to two reservoir sites with 2.5 million gallons of storage at each site. The water distribution system has over 125 miles of mains and encompasses about 18 square miles. We maintain three separate pressure zones within the distribution system.

Current and Planned Water Supplies Table 4

Water Supply Sources	2005	2010	2015	2020	2025	2030
Purchased from HBMWD	1761	1900	2047	2173	2349	2522
Units of Measure: Acre Feet						

Humboldt Bay Municipal Water District

HBMWD has long-term wholesale contracts in place to provide treated water for domestic use for seven municipalities/districts and one contract to provide raw water for industrial use. HBMWD maintains facilities and water rights sufficient to deliver 75 million-gallons-per-day to its contract customers. The HBMWD operates a 48,000 acre foot reservoir about 79 east of the coastal areas. This reservoir impounds only about 3% of the watershed and fills at a very rapid rate in normal rainfall years. Approximately 11 MGD is delivered to the municipal/district customers and entitlement is limited be actions taken during water shortage emergencies. Of the delivered water, a peak flow rate of 3.0 MGD is committed to serve MCSD customers.

HBMWD draws water from Ranny Wells located in the bed of the Mad River just northeast of Arcata along Highway 299. These wells draw water from the riverbed at depths ranging from 60-90 feet. Following natural filtration HBMWD chlorinates the water for disinfection purposes. During the rainy season, all water is routed through a Turbidity Reduction Facility prior to disinfection.

The MCSD receives the water delivery at the North Bank Pump Station having a bank of five pumps. Standby chlorination is available at this site should the chlorine residual from delivered water drop below 0.2 ppm. The District has (2) 1.5 Million gallons tanks, (2) 1.0 million gallon tanks, a 100,000 and 150,000 gallon redwood tank and three booster stations throughout the distribution system.

Section 2. Step 4 Reliability of Supply

The North Coast is one of the only areas in California with an abundance of water. Droughts, while severe climatically, have not resulted in the level of water supply shortfalls that other area of California routinely experience. The drought of 1976/1977

was the only declared water emergency on the North Coast. During that event, Ruth Lake storage was 52% of normal average volume and rainfall in the Ruth Lake area was 42% of historical average. The drought came to an end with heavy rains during November 1977.

MCSD is prepared to implement the measures as adopted in Ordinance 10 by the MCSD Board f Directors. This Ordinance 10 is in support of the *HBMWD Water Shortage Contingency Plan* (appendix 1), if a water shortage is declared. The MCSD Board of Directors must first declare that a water emergency exists, and then implement the Contingency Plan and enforce the measures of Ordinance 10.

Coordination and implementation of the Contingency Plan is assured through the activation of the HBMWD Drought Committee. This committee, established in 1977, is composed of wholesale customer representatives and HBMWD. The committee's responsibilities include review of trigger data and input provisions regarding actual stage implementation. HBMWD has a five stage rationing system to invoke during declared water shortages.

Supply Reliability – Table 8

		Multiple Dry Water Years		
Average/Normal Water Year **2000** (Volume)	Single Dry Water Year: **1976** (Volume)	Year 1 (Volume) **1990**	Year 2 (Volume) **1991**	Year 3 (Volume) **1992**
2,892	1,664	2,806	2,677	2,714
% of Normal	57%	97%	93%	94%
Unit of Measure: Acre-feet/Year				

Basis of Water Year Data Table 9

Water Year Type	Base Year	Historical Sequence
Normal Water Year	2000	
Single-Dry Water Year	1976	
Multiple-Dry Water Years	1990-1992	

There are no legal, environmental, water quality or climatic factors that should interrupt the water supply from the Mad River by the HBMWD to the MCSD.

Section 2. Step 5: Transfer and Exchange Opportunities

The MCSD does not have the capacity to exchange water with any other entity. There is the possibility of the main transmission main being extended north of our district to serve as an emergency supply to the town of Westhaven and the City of Trinidad to our north. This is unlikely due to the political aspects of additional water allowing for additional growth in the Westhaven area, a concept that is not popular with the current residents.

Transfer and Exchange Opportunities Table 11

Source Transfer Agency	Transfer or Exchange	Short-term (1yr)	Proposed Quantities	Long-term > 1 yr.	Proposed Quantities
NA					
Unit of Measure: Acre-feet/Year					

Section 2. Step 6: Water Use by Customer-type – Past, Current and Future

The MCSD has slow but consistent growth of about 2.8% annual service growth since the last five-year plan. This has reduced slightly from the previous five-year period. The District experiences modest growth from new subdivisions, apartments and senior relocating from the Southern California area. Very few commercial accounts are added each year with most being residential. There are a no industrial accounts with the District. This area is essentially a bedroom community of the Arcata/Eureka area to the south.

The District categorizes and bills customers on the basis of water consumption measured through water meters billed in hundred cubic foot increments. The District distinguishes industrial, commercial, multi-family and single family customers. In the event of a declared water shortage, the MCSD Board of Directors would specify water conservation measures in accordance with the HBMWD delivery schedules. The MCSD would then implement Ordinance 10 with the appropriate water rationing allocations.

Single-family residences are reducing in size from previous decades. This trend will probably continue downward slowly as more single parent families and seniors move into this area. The average monthly residential usage is about 7500 gallons per month. The 2000 census for the county indicates 2.61 persons per residence. Multifamily developments are a requirement of the housing codes, but often multiple units are on single meters. Typically, multiple units use about one-third to one-half of the water usage of a single-family household.

The MCSD has light commercial area of shops, stores, restaurants and two smaller shopping centers. Growth is slow (approximately 1%) with the commercial area a reflection of the bedroom community in this area. The District does track commercial areas but we do have many home based businesses and "cottage industries" that make accurate commercial service number and usage difficult, but we estimate about 195 commercial services in our community.

The MCSD has no industrial companies in our district area.

The MCSD has a small institutional/governmental sector, primarily the MCSD, a County Airport and maintenance yard, an elementary, middle and high school and a Coast Guard Air Station.

Agricultural water demand has dropped considerably for the MCSD over the past three decades. Former fields of flowers and potatoes have been replaced with residential subdivisions and a large Forest Service Nursery closed about 7 years ago. We do have some small agricultural users for growing blue berries and a few nurseries. The local dairies use ground water for irrigation that is plentiful in the area. The District uses reclaimed wastewater to irrigate two of the local dairies, diminishing the need for potable water being uses for pasture irrigation. Agricultural land in this area is slowly being converted to residential development, even though the County Planning Zones are attempting to slow this process. It is not economical to maintain agricultural businesses in this area as compared to the value of land for residential development.

The District encourages landscape watering via separate meters and drip systems. Residential subdivisions are often required to have front setbacks with landscape zones maintained through benefit assessment fees. The MCSD had accepted many of the open space and landscape zones as a condition of development.

All services are metered in the District, recorded and billed on a monthly cycle. Water deliveries are increasing at 2.9% annually compared to a 2.8% annual service growth. The actual usage per unit has been dropping for the last decade. The annual increase in delivery is due to the housing growth and not to increased per capita usage.

Past, Current and Projected Water Deliveries Table 12 (units in acre feet)

Year		Water Use Sector	Single Family	Multi-Family	Commercial	Industrial	Instit/gov	Landscape	Agriculture	Total
2000	metered	# of accounts	3636	535	185	0	11	9	6	4382
		Deliveries AF/Y	853	335	156	0	39	8.5	17	1408
	unmetered	# of accounts								
		Deliveries AF/Y								
2005	metered	# of accounts	4773	650	194	0	11	9	6	5643
		Deliveries AF/Y	999	370	172	0	43	9	17.5	1611
	unmetered	# of accounts								
		Deliveries AF/Y								
2010	metered	# of accounts	5203	718	204	0	11	10	6	6152
		Deliveries AF/Y	1074	408	190	0	47.5	9	18	1748
	Unmetered	# of accounts								
		Deliveries AF/Y								
2015	metered	# of accounts	5744	792	225	0	11	12	6	6790
		Deliveries AF/Y	1126	442	206	0	51.5	10	19	1854
	unmetered	# of accounts								
		Deliveries AF/Y								
2020	metered	# of accounts	6312	874	249	0	11	14	6	7266
		Deliveries AF/Y	1243	488	227	0	57	10	20	2046
	unmetered	# of accounts								
		Deliveries AF/Y								
2025	metered	# of accounts	7001	966	275	0	11	16	6	8273
		Deliveries AF/Y	1372	539	251	0	63	11	21	2257
	unmetered	# of accounts								

	Deliveries AF/Y								
2030 metered	# of accounts	7729	1066	303	0	11	18	6	9133
	Deliveries AF/Y	1515	595	277	0	70	11	22	2490
2030 unmetered	# of accounts								
	Deliveries AF/Y								
Unit of Measure: Acre-feet/Year Agricultural water does not include water that is privately pumped									

Sales to Other Agencies Table 13 NONE

Water Distributed	2000	2005	2010	2015	2020	2025	2030
NONE							
Total	NA	NA					
Unit of Measure: Acre-feet/Year							

Additional Water Losses:

The McKinleyville CSD performs a water audit each year. Unaccounted for water is generally about 10% of water purchased (150.0 acft.)

Additional Water Losses Table 14

Water Use	2000	2005	2010	2015	2020	2025	2030
Saline barriers	NA						
Groundwater Recharge	NA						
Conjunctive Use	NA						
Raw Water	NA						
Recycled	NA						
Other (define)	NA	1554					
Unaccounted –for-system losses		150					
Total							

Total Water Use	2000	2005	2010	2015	2020	2025	2030
Sum of Tables 12,13 and 14		1704					

Total water use is the sum of water use by customer categories, sales to other agencies and additional water uses.

Section 2. Step 7: Demand Management Measures

The North Coast Area has an abundant supply of water from the Mad River source. Our area also experiences heavy rainfall from October to May resulting in low winter uses. Many residents do not water lawns, or water infrequently, keeping summer uses low by comparison to most areas of the State. Summers here are foggy and cool, so evaporation is minimal. Residents know that the occasional summer rains and the fall rains will maintain yards and vegetation. Our area residential use is about 57% less than the State average. Residential per capita use of water averages 108 gallons per day, substantially

below national and state averages. This figure does not include commercial, industrial and agriculture water demands.

MCSD residents are very concerned about environmental issues and understand the importance of conservation. Even though we are in an area of heavy rainfall, environmental awareness is important in this area. This area is very active in personal styles of conservation as a part of their normal lives, without the need for mandated programs from State or Federal sources. The Mad River salmon and steelhead fisheries, the sensitivity of the local area to past logging degradation, and over fishing is foremost in the minds of the residents. Further, this is an economically depressed area with small residential lots and low water uses.

Based upon the water supply abundance and public awareness of water condition and conservation attitudes, strict water conservation measures seem unnecessary and would not be an efficient use of public funds. The District customers are not supportive of expensive measures to reduce water usage when our usage is already far below the state average. The public does not understand or nor appreciates our insistence of reducing water use, knowing the southern areas of the state seek to export our water south. To push further conservation and at the same time increase their monthly bills to pay for less water and the cost of the programs makes little sense in our area. Personnel time performing surveys and implementing expensive mandated programs only serve to increase their rates. Measures are in place should a water shortage occur, but with rainfall of over 60 inches per year and abundant river flows, further management measures do not seem necessary at this time.

Demand Management Measures:

A: Water survey programs for single-family residential and multifamily residential customers.

No surveys of single-family units are offered at this time. Our customers use only 280 gallons per residence per day, or 108 GPCD. Public Health estimates 250 gallons per capita per day, so our customers use only about 43% of this amount. Due to his low usage amounts water audits do not seem appropriate or necessary at this time. We do contact customers if the monthly meter read indicates higher than normal usage. We do advise and assist customers with suspected plumbing problems if they contact us or respond to our calls regarding higher usage.

B: Residential plumbing retrofit:

Low flow toilets and low flow showerheads are fixtures installed in new homes and remodel projects in our district. Monthly rates and usage are very important to local residents. Quarterly newsletters emphasize the importance of repairing leaks and conserving water to keep rates low and minimizing the need for additional storage. Studies indicate that until the household is 4 to 5 persons, retrofits are not cost effective

for smaller existing houses. With 2.61 persons per household, unnecessary plumbing retrofits are not cost effective. The District has not implemented low flow fixture change outs due to already low residential usage.

C: System water audits, leak detection, and repairs.

MCSD meters all uses and records all water sales and uses of parks facilities. System leaks are infrequent and immediately repaired. The water distribution system is only about 35 years old and the system is kept in excellent condition. The District experiences only a few service leaks per year and no main leaks. A water audit is performed each year on water purchased, purchased water sold and all known losses or uses. Our water loss is about 10% of water purchased totaling about 150 acre-feet per year. This water loss amount can be explained by older meters that are under-registering. With 125 miles of water mains this amount suggests further efforts would generate a very small return on the effort required to make an exhaustive water audit and aggressive leak-monitoring program. We monitor our system closely and consider our response level to be more than adequate at this time. We track and contact customers about unusual increases in their monthly usage and talk to them about any possible leaks and how to check their meters and plumbing.

D: Metering with commodity rates for all new connections and retrofit of existing connections

All 5300 services are metered in the district. Rates are two tiered to encourage low use and reward conservation. Use less than 500 cubic feet is charged at a rate of $0.90 and above 500 cubic feet charged at $1.35 per hundred cubic feet.

E: Large landscape conservation programs and incentives.

All new subdivisions forming open space zones are required to install meters and encouraged to install drip systems and plant native plants that need little to no watering. The District manages many of these subdivision open space zones and ensures that conservation measures are met.
There are twenty-three such open space zones maintained by the District. Commercial business and apartments install irrigation meters since sewer fees are linked to water usage. Irrigation meters reward those customers by keeping their water rates lower without the additional sewer charge.

F: High-efficiency washing machine rebate programs. None offered. These units are very expensive (about $1,000 per unit) and since we are in a depressed area this is not a practical solution. Pacific Gas and Electric does offer incentive programs for those installing energy saving appliances and replaces many of these items at no charge for seniors. The amount of the incentive program is dependent up the users consumption patterns.

G: Public information programs. The District publishes a newsletter (every four months) and we frequently remind customers of the need to conserve and not dispose of hazardous material down the sewer due to environmental concerns. Lots here are small we emphasize early morning watering, drip systems or night time sprinkler systems to conserve energy and water. We provide system usage and give tips on how to detect leaks and keep their water usage to a minimum. The District mails out 15,000 newsletters per year reminding and educating our customers to checking for leaks, checking their meters should they suspect high usage, water wisely and not to over-water lawns or gardens. We personally contact individual customers if their usage patterns change suddenly or seem higher than normal.

H: School education programs. No formal program is offered at present. The Conservation Coordinator does meet with school groups or classes that request classroom presentations on the water cycle, recycle information, pollution concerns and water supply interest. We pass out water conservation kits to children with rulers, erasures, balloons, note pads and other items to educated them on the effect of water leaks and protection of the water source. We purchase about 500 of these kits annually to pass our to children of school age, targeted mainly to those in elementary school.

I: Conservation programs for commercial, industrial and institutional accounts. No specific program is offered at this time. The District has no Industrial users, and most commercial uses are for small businesses that serve our residential community. Our water rate structure rewards low users both for water and sewer rates.

J: Wholesale agency programs. Humboldt Bay Municipal Water District is the District's supplier for all our water. Conservation programs are described for staged reductions of water usage should a water shortage occur in the supply system. The MCSD is strictly a retailer for our local customers.

K: Conservation pricing. The District has a two-tiered system to encourage low usage. For the first 500 cubic feet we charge $0.90 per one hundred cubic feet. Usage in excess of 500 cubic feet is charged at 1.35 hundred cubic feet. The rate structure is as follows:

Single residential: $6.15/month + usage

Multi residential: $6.15/month + usage

Commercial: $6.15/month + usage

Institutional/Government: ¾ to 1" meter $6.15/month + usage
1 ½ " to 2" meters $31.85/month = usage

Irrigation (dedicated): $6.15/month + usage

Sewer Rate: residential is $14.60 per unit and $0.20/ccf up to 1200 ccf.
commercial is 15.53/unit +(usage $1.17 to $2.52 /100ccf over 440 ccf)

L: Water conservation coordinator. The General Manager acts as the conversation coordinator for the District. He publishes articles in the local newspaper and the District's quarterly newsletter. The GM is responsible to conduct annual water loss audits of the distribution system. All leaks are immediately repaired and assistance is given to residents in timely repairs of their private plumbing facilities. About 5% of the General Manager's time is dedicated to water education, customer contacts, leak problems and public speaking. There is no specific budget amount for this activity, but an estimated cost of all activities would be about $10,000 annually.

M: Water waste prohibition. The District has published in our Ordinances the prohibition of water wastage and authorized the General Manager to take immediate action up to and including turning off the water service if timely action by the resident does not occur to repair the leak.

N: Residential ultra-low-flush toilet replacement programs. The District does not have an active program to change out low–flush toilets. New homes and remodels all utilize low-flush units. Over time all the residences in the district will be changed out by new construction or attrition. Sewer usage is only about 65 gallons per capita per day, so this program would be negligible in its effect.

O: DMM's not implemented. All the DMM's are implemented to some degree, but not in the detail as listed in the guide. This area has abundant water, but more importantly, we have a very low usage pattern due to high rainfall and a depressed economy. State mandated low-income housing and density patterns are resulting in very small lots for all new homes and infill units. Many apartments and multifamily units are being constructed that have very low usage patterns. Usage per residence continues to drop in our area over the last twenty-five years.

Section 2. Step Nine: Planned Water Supply Projects and Programs

This area has an abundant supply of water. HMBWD does not have any additional water supply projects planned in the foreseeable future. The MCSD does plan to add additional reservoir storage in the next five-year period to added to the 6.25 MG of storage existing. We anticipate constructing another 3.0 MG reservoir to provide additional storage in the event of a loss of supply due to catastrophic loss of our supply line under the Mad River.

Section 2. Step Ten: Development of Desalinated Water

There are no plans in this region for this consideration. Due to our abundance of fresh water supply this is not a viable option.

Section 2. Step Eleven: Current or projected Supply of Wholesale Water

Section 2 - Contents of UWMP Step Eleven: Current or Projected Supply Includes Wholesale Water

HBMWD is the local wholesaler for our area and supplies all the water for the MCSD. Table 19 are the projections sent to HMBWD of our expected water needs.

Agency demand projections provided to wholesale suppliers – AF/Y (Table 19)

Wholesaler	2010	2015	2020	2025	2030/opt
HBMWD	2014	2223	2456	2710	2993

Our local supplier has indicated that the requested amounts are available under the current supply and permit. HBMWD is the sole supplier for our District

Wholesaler identified & quantified the existing and planned sources of water available to your agency in – AF/Y (Table 20)

Wholesaler Sources	2010		2015		2020		2025		2030/opt	
	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned
(source 1)	2014		2223		2456		2710		299	

The local supplier uses only about one-half the supply available under their permit. The following information is taken from Table 8 of the HBMWD report for Water Supply Reliability.

Wholesale Supply Reliability - % of normal supply (Table 21)

	Multiple Dry Water Years				
Wholesaler	Single Dry	Year 1	Year 2	Year 3	Year 4
HBMWD AC FT	165,000	571,800	371,3000	285,300	NA
% of normal	16%	57%	37%	28%	

Factors resulting in inconsistency of wholesaler's supply (Table 22)

Name of supply	Legal	Environmental	Water Quality	Climatic

The wholesaler does not expect any difficulty in meeting the supply requirements for the next 25-year period. Table 22 is not applicable for this area.

Section 3 - Determination of DMM Implementation

Section 3 is not applicable for the MCSD. The Water Supplier develops the DMM information in their UWMP.

Section 4 - Water Shortage Contingency Plan Step One: Stages of Action

The MCSD is one member of the seven agencies that are served by our local supplier. MCSD has Ordinance 10 that was instituted to work in conjunction with the actions taken by HBMWD in the event of a water drought. Attached is the water supplier's response to this section of the Plan.

Section 4 – Water Shortage Contingency Plan (HBMWD)

Plan Overview and Coordination

Overview

The District provides potable water on a wholesale basis to the cities of Arcata, Eureka, and Blue Lake; and to the Humboldt, Manila, Fieldbrook and McKinleyville Community Services Districts. Retail water service is provided to less than 200 customers who are generally located closer to the District's distribution system than to any other municipal water service. Raw water for industrial use is provided to the pulp mill located on the Samoa Peninsula and operated by Evergreen Pulp, Inc.

Wholesale water is provided to the District's customers under long-term contracts. These contracts specifically assert the District's right, in accordance with the California Water Code, to suspend the water delivery requirements of the contracts if the District's Board declares that an actual or potential water shortage exists, or if all wholesale customers and the District mutually agree to implement this Water Shortage Contingency Plan.

During the 1977 drought, which was the only declared water emergency in the history of the District, it was the policy and practice of the District to set maximum use targets for its wholesale municipal customers, allowing them to choose how to meet those targets. Since the wholesale industrial customers could not operate effectively at significantly reduced water consumption levels, they were required to repair leaks and increase the efficiency of their water use. A reservoir capacity was set at which all deliveries to the industrial customers would cease. Fortunately, capacity did not fall to that level.

This plan operates on the same principles. The municipalities will retain responsibility for control of allotments provided under the provisions of this plan The wholesale industrial customers will face the reductions outlined in each action stage. The District's 200 retail customers will be treated in accordance with the action stages of this plan.

Coordination

Coordination in implementing this Water Shortage Contingency Plan is assured through the activation of the Drought Committee. The first Drought Committee was formed in 1977 and the group has been activated as needed over the past 28 years. It is composed of representatives of the District and each of its wholesale customers. The committee's responsibilities include:

1. Review the status of the water supply and forecasts.
2. Recommend specific actions in accordance with this plan and each entity's own water shortage plan.
3. Assure that priority of allocations meets legal requirements of consistency and non-discrimination.
4. Coordinate media releases and public announcements.

5. Coordinate interaction with regulatory agencies such as the California Departments of Water Resources, Fish and Game, and Health Services.
6. Review and make recommendations about requests for waivers from, or exceptions to, actions taken pursuant to this plan.

1. Stages of Action

There are five defined drought action stages. These stages may be implemented with or without a formal declaration of a water emergency by the District's Board of Directors. In the event circumstances merit or require a declaration of a water shortage emergency, it is the intent of the District to rely on this plan to provide the primary framework to deal with such an emergency. The triggers attached to each stage are not intended to be absolute. Circumstances not currently foreseeable may dictate moving to a higher action stage before the trigger levels for that stage are reached. Conversely, action stage implementation may be postponed or suspended if there is sufficient natural flow in the river to meet downstream needs. Action stages will be terminated, in consultation with the Drought Committee, as rain, runoff, and lake levels permit.

Stages and Conditions

Table 23 - Water Supply Shortage Stages and Conditions

Stage No.	Water Supply Conditions	% Shortage
Stage 1	Controlled Release from Storage	
Stage 2	Optimizing Available Supply	
Stage 3	General Reduction	10% to 15%
Stage 4	Usage Allocations	16% to 30%
Stage 5	Rationing	50%

- **Stage 1 – Controlled Release from Storage**

  This means releasing from storage only the amount of water needed for instream and water supply purposes. Electric power production (through the hydro plant at the base of Ruth Dam) is only incidental to water supply operations and not justification in itself for water releases from Ruth Lake during Stage 1.

- **Stage 2 – Optimizing Available Supply**

  Reduction of peaking by wholesale industrial customers, resulting in narrower production ranges and a lower flow requirement in the river.

  General voluntary domestic water conservation measures and public education efforts encouraging water conservation.

  Consideration to implement Stage 2 will be triggered when the volume in Ruth Lake falls to 65% of capacity (31,200 acre-feet) and the accumulated rainfall in

the Ruth area is 70% or less of the historical average (49 inches). The Drought Committee will review the trigger data and make recommendations regarding actual implementation of Stage 2.

- **Stage 3 – General Reduction**

  Note: Implementation of Stages 3, 4 and 5 will require the District to initiate requests to the California Department of Fish and Game and the Water Resources Control Board to allow modifications of the minimum downstream release and minimum pool requirements at Ruth Lake as stipulated in the District's water rights permits.

  All wholesale and retail customers of the District will be required to reduce usage by 10% to 15% over the previous two-year average actual use. It is estimated that this will save between 2.7 MGD and 4.0 MGD, or up to 370 acre-feet per month, based on current actual usage.

  Consideration to implement Stage 3 will be triggered when Ruth Lake reaches 40% of capacity (19,200 acre-feet) and accumulated rainfall is 60% or less of historical average (42 inches). The Drought Committee will review the trigger data and provide input regarding actual implementation of Stage 3.

- **Stage 4 – Usage Allocations**

  Wholesale industrial water usage will be limited to a maximum of 80% of the previous two years of actual average use. Each wholesale industrial customer will provide certification that water use is being optimized and that wasteful use of water is not occurring.

  Use allocations reflecting 16% to 30% reductions will be established for the municipalities and retail domestic customers using the previous two years actual average usage. The specific reduction will be determined on a biweekly basis based on rate of supply reduction, weather and other relevant factors. It is estimated that this will save between 4.0 MGD and 6.6 MGD, or up to 610 acre-feet per month over current usage.

  Consideration to implement Stage 4 will be triggered when Ruth Lake reaches 30% of capacity (14,400 acre-feet) and accumulated rainfall is 50% or less of historical average (35 inches). The Drought Committee will review the trigger data and provide input regarding actual implementation of Stage 4.

- **Stage 5 – Rationing**

  Wholesale industrial water usage will be limited to the amounts required for human consumption, sanitation, and fire protection. No water will be available for industrial processes. Municipal and retail customer usage will be reduced on a basis of up to 50% as may be determined by the rate of use of available supply and weather conditions. It is estimated that this will save up to 21 MGD, or 1,930 acre-feet per month over current usage.

Consideration to implement Stage 5 will be triggered when Ruth Lake reaches 25% of capacity (12,000 acre-feet) and accumulated rainfall for the Ruth area continues at 50% or less of historical average ((35 inches). The Drought Committee will review the trigger data and provide input regarding the actual implementation of Stage 5.

Projected Effect of Action Stages on Water Supply Durability

A primary goal of any Water Shortage Contingency Plan is to ensure, to the greatest extent possible, that the water supply will last until it can be replenished. To examine how well this plan might achieve that goal, some supply duration analyses have been performed. These analyses compare how long the water supply in the reservoir will last both with and without implementation of the plan. The calculations assume that no rainfall or other inflows to the reservoir occur and do not take into account minimum releases required for fish and wildlife, as these vary throughout the year and would likely be modified during the water shortage. Flows for other water rights on the river are included; these total 1.585 MGD. Also, the calculations assume that the action stages are put into effect as soon as the reservoir volume trigger point is reached and that the maximum reductions for each stage are implemented.

The analyses compute the number of days the supplies would last starting from the Stage 2 trigger point, which is the lake reaching 65% of capacity (31,200 acre-feet). If no reductions were made and the current delivery level of 27 MGD was maintained, this supply would last 352 days.

If the plan were followed as described above, the various stages would be implemented as follows:

- Stage 2 would be implemented immediately. This stage doesn't require any reductions; deliveries would be maintained at the current level of 27 MGD.
- Stage 3 would be reached on day 136 when the reservoir reached 40% of capacity (19,200 acre-feet). This would lead immediately to 15% reductions to both domestic and industrial customers. This would reduce the production rate to 23 MGD.
- Stage 4 would be reached on day 199 when the reservoir reached 30% of capacity (14,400 acre-feet). This would lead immediately to 30% reductions in domestic deliveries and 20% reductions in industrial deliveries. This would reduce the production level to 21 MGD.
- Stage 5 would be reached on day 235 when the reservoir reached 25% of capacity (12,000 acre-feet). This would lead immediately to 50% reductions in domestic deliveries and reduce industrial water usage to amounts required for human consumption, sanitation, and fire protection (called 95% reduction for this analysis). This would reduce the production level to 8 MGD.
- Once in Stage 5, the supplies would last another 493 days, running out on day 728.

So, in this analysis, the duration of supplies is more than doubled (from 352 days to 728 days) through the implementation of this Water Shortage Contingency Plan. An increase in normal water deliveries, especially the District's entry into additional wholesale

contracts for industrial water, would reduce the duration of the supplies. However, the proportional increase in the duration of supplies afforded by the plan stays about the same. For example, if normal industrial deliveries totaled 30 MGD instead of the current 15 MGD, the supplies would last for 238 days without any demand restrictions and 613 days with the restrictions outlined in the plan.

2. Estimate of Minimum Supply for Next Three Years

Using data from the three multiple dry water years 1989/90 through 1991/92, the minimum water supply volumes needed for each of the next three years would be 252,000 acre-feet, the District's full allocation of 75 MGD.

Table 24 – Three-Year Estimated Minimum Water Supply (AF/Y)

Source	Year 1	Year 2	Year 3	Normal
Mad River	571,800	371,300	283,500	1,002,000

3. Catastrophic Supply Interruption Plan

The District's Emergency Operations Plan (EOP) provides the overall response procedures for catastrophic supply interruptions. The EOP further provides specific procedures for power outages and for security incidents. The District's Emergency Action Plan (EAP) provides response procedures for catastrophic supply interruptions involving the R.W. Matthews Dam and Reservoir (Ruth Lake) at Ruth, such as an earthquake. The District's Operations Plan (OP) provides procedures for system failures. Hazardous materials incidents are covered by numerous response plans depending on the nature of the incident.

Table 25 - Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions
Regional Power Outage	Emergency Operations Plan-Power Outage Procedures
System Failure	Operations Plan for Water Supply, Treatment, and Distribution System
Earthquake	Emergency Operations Plan/ Emergency Action Plan (R.W. Matthews Dam at Ruth)
Hazardous Material Spill	Hazardous Materials Response Plans
Acts of Terrorism	Emergency Operations Plan-Security Procedures/ Emergency Action Plan (R.W. Matthews Dam at Ruth)

4. Prohibitions, Consumption Reduction Methods, and Penalties

As noted earlier in this plan, each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above. The District's Board of Directors reserves the right to adopt penalties for non-compliance with various action stages, but feels it is not necessary to do so at this time. Penalties will be considered when a water shortage emergency is actually declared. Effectiveness of this plan will be monitored on a daily basis using continuously metered data from Ruth Lake and the metered connections to all wholesale municipal and industrial customers. Tables 26 (prohibitions), 27 (consumption reduction methods), and 28 (penalties) are not necessary at this time.

The MCSD Board of Directors adopted Ordinance No. 10 on June 17, 1977 that defines the conditions and procedures that will be adopted once a water emergency is declared. The initial stages are for a voluntary reduction of 10% of their fall usage. Voluntary reduction would apply to outdoor uses such as washing cars, watering of plants, trees, vines, grass, plants, porches, sidewalks, etc. Large users (over 50,000 gallons per month) shall not irrigate, sprinkle, water any shrubbery, ground cover, plants gardens, trees or any other vegetation except as assigned the Manager after consultation.

At such time the Manager determines that the water available to the MCSD is insufficient to meet the demand of customers of the District and that all water shall be reserved for human consumption, sanitation and fire protections and may order reduction of individual consumption as directed by the Board of Directors. Fines shall be levied of $10.00 for the first offense, $30.00 for the second offense and $100.00 and a misdemeanor charge for the third offense. Further violations allow the Manager to disconnect the water service. Reconnection shall not occur without all payment of fines and reconnection fees.

The Manager is instructed to see that water is distributed equitably to the customers in such a water emergency condition. These regulations shall remain in effect until the Board of Directors act to declare the water emergency no longer exists.

5. Analysis of Revenue Impacts of Reduced Sales During Shortages

Each wholesale customer must gauge the revenue and expenditure impact of the action stages. The expenditure and revenue impacts on the District are negligible since the wholesale rates are designed to cover costs incurred by the District in producing and distributing the water. Expenditures and revenues for costs directly related to the amount of water produced (e.g. costs for power for pumping) will both decrease as deliveries of water are curtailed. Tables 29 (revenue impacts) and 30 (expenditure impacts) are not applicable.

The MCSD has the same concerns as HBMWD, the local supplier. We have a fiduciary responsibility to cover our expenses and if the water emergency were to be prolonged, the District would need to raise rates to compensate for the loss of revenue from water commodity sales. The amount of rate increase would be dependent upon the length of the water emergency duration.

6. Draft Ordinance and Use Monitoring Procedure

Draft Ordinance

A copy of the District's draft Water Shortage Contingency Resolution for declaring a Water Shortage Emergency and implementing the District's Water Shortage Contingency Plan is attached to the District's UWMP (see Appendix A).

Use Monitoring Procedure

To determine the actual reductions in use of water during a water shortage, the District will use its Supervisory Control and Data Acquisition (SCADA) system to monitor distribution to its customers on a daily basis.

Table 31 – Water Use Monitoring Mechanisms

Mechanisms for Determining Reductions	Type and Quality of Data Expected
Monitoring Daily Distribution Records	SCADA Data is High Quality

Section 5 – Recycled Water Plan

The MCSD collects and treats wastewater for about 65% of the District residents (4300 connections). Annual sewer flow of 1,065 Acre Feet is 58% of water delivered. This treated wastewater is discharged to the Mad River during the wet winter months and used for irrigation of farm land and forest areas during the summer times. The District owns a 150-acre ranch that is leased for dairy operations. We apply treated wastewater to about 100 acres of our ranch and forty-acres of an adjoining ranch. The District also irrigates forty acres of forest and pasture land adjacent to the treatment plant.

Wastewater Collected and Treated – AF/Year (Table 33)

	2000	2005	2010	2015	2020	2025	2030/opt
Wastewater collected & treated in service area	1060	1065	1067	1070	1072	1074	1076
Quantity that meets recycled water standard	49%	49%	49%	49%	49%	49%	49%

51% of the treated wastewater is discharged to the Mad River or percolation basin adjacent to the river. Our typical river discharge is from mid-October to May 15. Recycled wastewater is used for irrigation to pasture lands to grow grass from mid-May until the rains start in the fall. The amount being used for irrigation is at a maximum with very little opportunity to expand. 100% of summer flows are used for recycling

purposes but when the rains start and the ground is saturated, the river discharge is our only viable option. The pattern will not change in the foreseeable future.

Recycling does not save on water since we have abundant water in this area, but it does save on power to run irrigation pumps. We currently irrigate about 180 acres during the summer period. The only way to increase our recycle amount is if our area grows and summer flows to the plant increase.

Disposal of wastewater (non-recycled) AF/Y (Table 34)

Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030/opt
Name of method	Secondary	541	541	551	541	541	541
Name of method							
Name of method							
Name of method							
Total				541			

Identify the current uses of recycled water, including type, place and quantities.

Recycled Water Uses - Actual AF/Y (Table 35 a)

Type of Use	Treatment Level	2005 AF/Y
Agriculture	Secondary	497
Landscape	none	
Wildlife Habitat	none	
Wetlands :	Secondary	44
Industrial		
Groundwater Recharge		
Other (type of use)		
Other (type of use)		
Total		541

Section 5 - Recycled Water Plan Step Three: Potential and Projected Use, Optimization Plan with Incentives

Water is abundant and relatively inexpensive in our area. Dual systems for recycle use would be extremely expensive for the piping installation. Additionally, tertiary treatment with nutrient removal would be required for recycle us in parks and lawn areas. Our pond plant produces secondary treatment but is not capable of producing such high quality effluent. Economic is this area simply will not allow such an expensive concept.

Current recycling use of 48% our of treated wastewater for agricultural purposes to grow hay in the summer period is about all that is practical for this area. We are constructing marshes that will utilize about 44 acre feet in the summer periods but cannot be used in the wetter winter months. 100% of summer flows are recycled, but due to our high rainfall in late fall, winter and spring, recycling is not a consideration during these periods.

Tables 35 through 38 are not applicable to this area due to high rainfall and recycle use cannot be increased past current levels.

Recycled Water Uses - Potential AF/Y (Table 35 b)

Type of Use	Treatment Level	2010	2015	2020	2025	2030/opt
Agriculture						
Landscape						
Wildlife Habitat						
Wetlands						
Industrial						
Groundwater Recharge						
Other (type of use)						
	Total	XXX				

Explain the technical and economic feasibility of serving the potential uses listed above.

Projected Future Use of Recycled Water in Service Area – AF/Y (Table 36)

Not Applicable.

Type of Use	2010	2015	2020	2025	2030/opt
Agriculture					
Landscape					
Wildlife Habitat					
Wetlands					
Industrial					
Groundwater Recharge					
Other (type of use)					
Total projected use of Recycled Water					

Compare your UWMP 2000 projections with UWMP 2005 actual use and explain any discrepancies.

Not Applicable

Recycled Water Uses - 2000 Projection compared with 2005 actual – AF/Y (Table 37)

Type of Use	2000 Projection for 2005	2005 actual use
Agriculture		
Landscape		
Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
Other (type of use)		
	Total	

Describe actions that might be taken to encourage recycled water use and the projected results of these actions in terms of acre-feet of recycled water used per year

Methods to Encourage Recycled Water Use (Table 38)

Actions	AF of use projected to result from this action				
	2010	2015	2020	2025	2030/opt
Financial incentives					
Name of action					
Name of action					
Name of action					
Total					

Provide a recycled water use optimization plan that includes actions to facilitate the use of recycled water (dual distribution systems, promote re-circulating uses, etc.)

Section 6 – Water Quality Impacts on Reliability

As discussed in Section 2, Step 3 (Water Sources), the District has a very reliable source and supply of very high quality water. The District does not expect water quality to affect its water management strategies or its supply reliability. Table 39 projects no water supply changes due to water quality.

Table 39 – Water Supply Changes Due to Water Quality – Current and Projected (%)

Water Source	2005	2010	2015	2020	2025	2030
Mad River	0	0	0	0	0	0

Section 7 – Water Service Reliability

1. Projected Normal Water Year Supply and Demand

Table 40 – Projected Normal Water Year Supply (AF/Y)

	2010	2015	2020	2025	2030
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Normal Year for Permit	100.0%	100.0%	100.0%	100.0%	100.0%
% of Normal Year for Basin (1,002,000 AF/Y)	8.4%	8.4%	8.4%	8.4%	8.4%

Table 41 – Projected Normal Water Year Demand (AF/Y)

	2005	2010	2015	2020	2025	2030
Demand	28,470	29,241	30,086	31,002	31,991	33,067
% of Year 2005	100.0%	102.7%	105.7%	108.9%	112.4%	116.1%

Table 42 – Projected Normal Year Supply and Demand Comparison (AF/Y)

	2010	2015	2020	2025	2030
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	29,241	30,086	31,002	31,991	33,067
Difference (supply minus demand)	54,759	53,914	52,998	52,009	50,933
Difference as % of Supply	65.2%	64.2%	63.1%	61.9%	60.6%
Difference as % of Demand	184.0%	179.2%	171.0%	162.6%	154.0%

2. Projected Single Dry Year Supply and Demand Comparison

Table 43 – Projected Single Dry Year Water Supply (AF/Y)

	2010	2015	2020	2025	2030
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal for Permit	100.0%	100.0%	100.0%	100.0%	100.0%
% of Single Dry Year for Basin (165,000 AF/Y)	50.9%	50.9%	50.9%	50.9%	50.9%

Table 44 – Projected Single Dry Year Water Demand (AF/Y)

	2010	2015	2020	2025	2030
Demand	29,241	30,086	31,002	31,991	33,067
% of Projected Normal	100%	100%	100%	100%	100%

Table 45 – Projected Single Dry Year Supply and Demand Comparison (AF/Y)

	2010	2015	2020	2025	2030
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	29,241	30086	31,002	31,991	33,067
Difference (supply minus demand)	54,759	53,914	52,998	52,009	50,933
Difference as % of Supply	65.2%	64.2%	63.1%	61.9%	60.6%
Difference as % of Demand	184.0%	179.2%	171.0%	162.6%	154.0%

3. Projected Multiple Dry Year Supply and Demand Comparison

Table 46 – Projected Supply during Multiple Dry Year Period Ending 2010 (AF/Y)

	2006	2007	2008	2009	2010
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 47 – Projected Demand during Multiple Dry Year Period ending in 2010 (AF/Y)

	2006	2007	2008	2009	2010
Demand	28,621	28,775	28,931	29,090	29,241
% of Projected Normal	100%	100%	100%	100%	100%

Table 48 – Projected Supply & Demand Comparison during Multiple Dry Year Period Ending in 2010 (AF/Y)

	2006	2007	2008	2009	2010
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	28,621	28,775	28,931	29,090	29,241
Difference (supply minus demand)	55,379	55,225	55,069	54,910	54,759
Difference as % of Supply	65.9%	65.7%	65.6%	65.4%	65.2%
Difference as % of Demand	193.5%	191.9%	190.3%	188.8%	187.3%

Table 49 – Projected Supply during Multiple Dry Year Period Ending in 2015 (AF/Y)

	2011	2012	2013	2014	2015
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 50 – Projected Demand during Multiple Dry Year Period Ending in 2015

	2011	2012	2013	2014	2015
Demand	29,405	29,571	29,740	29,912	30,086
% of Projected Normal	100%	100%	100%	100%	100%

Table 51 – Projected Supply & Demand Comparison during Multiple Dry Year Period Ending in 2015 (AF/Y)

	2011	2012	2013	2014	2015
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	29,405	29,571	29,740	29,912	30,086
Difference (supply minus demand)	54,595	54,429	54,260	54,088	53,914
Difference as % of Supply	65.0%	64.8%	64.6%	64.4%	64.2%
Difference as % of Demand	185.7%	184.1%	182.4%	180.8%	179.2%

Table 52 – Projected Supply during Multiple Dry Year Period Ending in 2020 (AF/Y)

	2016	2017	2018	2019	2020
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 53 – Projected Demand during Multiple Dry Year Period Ending in 2020 (AF/Y)

	2016	2017	2018	2019	2020
Demand	30,263	30,443	30,626	30,812	31,001
% of Projected Normal	100%	100%	100%	100%	100%

Table 54 – Projected Supply & Demand Comparison during Multiple Dry Year Period Ending in 2020 (AF/Y)

	2016	2017	2018	2019	2020
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	30,263	30,443	30,626	30,812	31,001
Difference (supply minus demand)	53,737	53,557	53,374	53,188	52,999
Difference as % of Supply	64.0%	63.8%	63.5%	63.3%	63.1%
Difference as % of Demand	177.6%	175.9%	174.3%	172.6%	171.0%

Table 55 – Projected Supply during Multiple Dry Year Period Ending in 2025 (AF/Y)

	2021	2022	2023	2024	2025
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 56 – Projected Demand during Multiple Dry Year Period Ending in 2025 (AF/Y)

	2021	2022	2023	2024	2025
Demand	31,193	31,388	31,586	31,787	31,992
% of Projected Normal	100%	100%	100%	100%	100%

Table 57 – Project Supply & Demand Comparison during Multiple Dry Year Period Ending in 2025 (AF/Y)

	2021	2022	2023	2024	2025
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	31,193	31,388	31,586	31,787	31,992
Difference (supply minus demand)	52,807	52,612	52,414	52,213	52,008
Difference as % of Supply	62.9%	62.6%	62.4%	62.2%	61.9%
Difference as % of Demand	169.3%	167.6%	165.9%	164.3%	162.6%

Table 58 – Projected Supply during Multiple Dry Year Period Ending in 2030 (AF/Y)

	2026	2027	2028	2029	2030
Supply (by Permit)	84,000	84,000	84,000	84,000	84,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 59 – Projected Demand during Multiple Dry Year Period Ending in 2030 (AF/Y)

	2026	2027	2028	2029	2030
Demand	32,200	32,411	32,626	32,845	33,067
% of Projected Normal	100%	100%	100%	100%	100%

Table 60 – Project Supply & Demand Comparison during Multiple Dry Year Period Ending in 2030 (AF/Y)

	2026	2027	2028	2029	2030
Supply Totals	84,000	84,000	84,000	84,000	84,000
Demand Totals	32,200	32,411	32,626	32,845	33,067
Difference (supply minus demand)	51,800	51,589	51,374	51,155	50,933
Difference as % of Supply	61.7%	61.4%	61.2%	60.9%	60.6%
Difference as % of Demand	160.9%	159.2%	157.5%	155.7%	154.0%

Section 8 – Adoption and Implementation of UWMP

The District 2005 Urban Water Management was written in the summer and fall of 2005 in conjunction with input from our other local agencies. This Plan was advertised in the local on October 15, 2005 and made available for public review and comment. The Draft UWMP was reviewed by the Board of Directors at their October 20, 2005 monthly Board Meeting. After a 60-day public review and comment period, the UWMP was brought back to the Board of Directors at the December 21, 2005 meeting for adoption. The Plan will be effective upon adoption by the Board and will be implemented immediately. The General Manager is the Official charged with the implementation of the plan should a water emergency resolution be declared by the Board of Directors in conjunction with action by the Regional Water Supplier.

DRAFT RESOLUTION

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MCKINLEYVILLE COMMUNITY SERVICES TO DECLARE A WATER SHORTAGE EMERGENCY

DATE:_____

The McKinleyville Community Services District Board of Directors does hereby resolve as follows:

PURSUANT to California Water Code section 350 et seq., the Board of Directors has conducted duly noticed public hearing to establish the criteria under which a water shortage emergency may be declared.

WHEREAS: The Board of Directors finds, determines and declares s follows:

a. The District is the water purveyor for the residential, commercial and industrial use of the McKinleyville area.
b. The demand for water service is not expected to lessen.
c. When the combined total amount of water supply available to the District from all sources falls at or below the State II triggering levels described in the 2005 Urban Water Management Plan, the District will declare a water shortage emergency. The water supply would not be adequate to meet the ordinary demands and requirements of water consumers without depleting the District's water supply to the extent that there may be insufficient water for human consumption, sanitation, fire protection, and environmental requirements. This condition is likely to exist until precipitation and inflow dramatically increases or until water system damage resulting from a disaster are repaired and normal water service is restored.

NOW, THEREFORE, BE IT RESOLVED that the McKinleyville Community Services District Board of Directors hereby finds, determines, declares and concludes that a water shortage emergency condition exists that threatens the adequacy of water supply, until the District's water supply is deemed adequate. After the declaration of a water shortage emergency, the Board of Directors will determine the appropriate Rationing stage and implement the District's Water Shortage Contingency Plan as required by HBMWD.

FURTHERMORE: the Board of Directors shall periodically conduct proceedings to determine additional restrictions and regulations which may be necessary to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.